

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing of claims in the application:

Claim 1 (currently amended): A composition of matter comprising a linked plurality of molecules which specifically bind to the mammalian target of rapamycin (mTOR), wherein the molecules are linked via attachment to a backbone comprising polymers.

Claim 2 (original): A composition of matter as in claim 1, wherein the molecules are selected from the group consisting of rapamycin, rapamycin hybrids, CCI-779, RAD-001, SDZ Rad (Everolimus), FK506 (Tacrolimus), ASM 981 (Pimecrolimus), Wortmannin, and Tumistatin.

Claim 3 (original): A composition as in claim 2, having from 3 to 10^6 molecules linked.

Claim 4 (original): A composition as in claim 3, having from 5 to 10^5 molecules linked.

Claim 5 (original): A composition as in claim 4, having from 7 to 5×10^4 molecules linked.

Claim 6 (canceled)

Claim 7 (currently amended): A composition of matter as in claim [[6]]1, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are covalently bound through the moieties to the backbone.

Claim 8 (original): A composition of matter as claim 7, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when attached to the backbone.

Claim 9 (original): A composition of matter as in claim 7, wherein the linking moieties are bound to the rapamycin molecules at sites which sterically interfere with the active sites of

rapamycin so that rapamycin activity is inhibited while the rapamycin remains attached to the backbone and restored when the rapamycin is released from the backbone.

Claim 10 (currently amended): A composition of matter as in claim [[6]]1, wherein the backbone degrades under preselected conditions to release the rapamycin molecules.

Claim 11 (original): A composition of matter as in claim 7, wherein the linking moieties lyse under preselected conditions to release the rapamycin molecules from the backbone.

Claim 12 (original): A composition of matter as in claim 7, wherein the backbone comprises a poly (amino acid).

Claim 13 (original): A composition of matter as in claim 12, wherein the backbone is polyaspartate, wherein rapamycin is covalently attached via an ester linkage between a free carboxylic acid on the aspartate side chain to a free hydroxyl at position 42 of rapamycin.

Claim 14 (original): A composition of matter as in claim 12, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a heterobifunctional linker between a free thiol on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 15 (original): A composition of matter as in claim 12, wherein the backbone is polylysine, wherein rapamycin is covalently attached via an amide-ester linkage between a free amine on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 16 (original): A composition of matter as in claim 12, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a disulfide linkage through a free thiol introduced to the rapamycin.

Claim 17 (currently amended): A composition of matter as in claim [[6]]1, wherein the backbone comprises polyethylene glycol (PEG), wherein the molecules comprise rapamycin attached to the PEG by ester linkages between free hydroxyls on the PEG and on the rapamycin.

Claim 18 (original): A composition of matter as in any of claim 1, wherein the molecules are polymerized.

Claim 19 (original): A composition of matter as in claim 18, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are polymerized through the linking moieties.

Claim 20 (original): A composition of matter as in claim 19, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when polymerized.

Claim 21 (original): A composition of matter as in claim 19, wherein the linking moieties are bound to the rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains polymerized and restored when the rapamycin is released.

Claim 22 (original): A composition of matter as in claim 19, wherein the linking moieties lyse under preselected conditions.

Claim 23 (original): A composition of matter as in claim 19, wherein the linking moieties comprise ascorbic acid attached to the rapamycin molecules via an ester linkage.

Claim 24 (withdrawn): An implantable prosthesis comprising:
a structure having a surface; and
linked pluralities of molecules which specifically bind to the mammalian target of rapamycin (mTOR) present on the surface.

Claim 25 (withdrawn): An implantable prosthesis as in claim 24, wherein the structure comprises a vascular prosthesis or stent implantable in a blood vessel.

Claim 26 (withdrawn): An implantable prosthesis as in claim 24, wherein the linked pluralities are covalently attached to the surface.

Claim 27 (withdrawn): An implantable prosthesis as in claim 24, wherein the linked plurality of molecules comprise molecules which are selected from the group consisting of rapamycin, rapamycin hybrids, CCI-779, RAD-001, SDZ Rad (Everolimus), FK506 (Tacrolimus), ASM 981 (Pimecrolimus), Wortmannin, and Tumistatin.

Claim 28 (withdrawn): An implantable prosthesis as in claim 27, having from 3 to 10^6 molecules linked.

Claim 29 (withdrawn): An implantable prosthesis as in claim 28, having from 5 to 10^5 molecules linked.

Claim 30 (withdrawn): An implantable prosthesis as in claim 29, having from 7 to 5×10^4 molecules linked.

Claim 31 (withdrawn): An implantable prosthesis as in any of claim 24, wherein the molecules are linked via attachment to a backbone.

Claim 32 (withdrawn): An implantable prosthesis as in claim 31, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are covalently bound through the moieties to the backbone.

Claim 33 (withdrawn): An implantable prosthesis as claim 32, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when attached to the backbone.

Claim 34 (withdrawn): An implantable prosthesis as in claim 32, wherein the linking moieties are bound to rapamycin molecules at sites which sterically interfere with the active sites of

rapamycin so that rapamycin activity is inhibited while the rapamycin remains attached to the backbone and restored when the rapamycin is released from the backbone.

Claim 35 (withdrawn): An implantable prosthesis as in claim 31, wherein the backbone degrades under preselected conditions to release the rapamycin molecules.

Claim 36 (withdrawn): An implantable prosthesis as in claim 32, wherein the linking moieties lyse under preselected conditions to release the rapamycin molecules from the backbone.

Claim 37 (withdrawn): An implantable prosthesis as in claim 32, wherein the backbone comprises a poly (amino acid).

Claim 38 (withdrawn): An implantable prosthesis as in claim 37, wherein the backbone is polyaspartate, wherein rapamycin is covalently attached via an ester linkage between a free carboxylic acid on the aspartate side chain to a free hydroxyl at position 42 of rapamycin.

Claim 39 (withdrawn): An implantable prosthesis as in claim 37, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a heterobifunctional linker between a free thiol on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 40 (withdrawn): An implantable prosthesis as in claim 37, wherein the backbone is polylysine, wherein rapamycin is covalently attached via an amide-ester linkage between a free amine on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 41 (withdrawn): An implantable prosthesis as in claim 37, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a disulfide linkage through a free thiol introduced to the rapamycin.

Claim 42 (withdrawn): An implantable prosthesis as in claim 31, wherein the backbone comprises polyethylene glycol (PEG), wherein the molecules comprise rapamycin attached to the PEG by ester linkages between free hydroxyls on the PEG and on the rapamycin.

Claim 43 (withdrawn): An implantable prosthesis as in any of claim 24, wherein the molecules are polymerized.

Claim 44 (withdrawn): An implantable prosthesis as in claim 43, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are polymerized through the linking moieties.

Claim 45 (withdrawn): An implantable prosthesis as in claim 44, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when polymerized.

Claim 46 (withdrawn): An implantable prosthesis as in claim 44, wherein the linking moieties are bound to the rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains polymerized and restored when the rapamycin is released.

Claim 47 (withdrawn): An implantable prosthesis as in claim 44, wherein the linking moieties lyse under preselected conditions.

Claim 48 (withdrawn): An implantable prosthesis as in claim 44, wherein the linking moieties comprise ascorbic acid attached to the rapamycin molecules via an ester linkage.

Claim 49 (withdrawn): A method for preparing a linked plurality of molecules which specifically bind to the mammalian target of rapamycin (mTOR), said method comprising:
providing a backbone molecule; and
binding the plurality of molecules to the backbone molecule.

Claim 50 (withdrawn): A method as in claim 49, wherein the molecules are selected from the group consisting of rapamycin, rapamycin hybrids, CCI-779, RAD-001, SDZ Rad (Everolimus), FK506 (Tacrolimus), ASM 981 (Pimecrolimus), Wortmannin, and Tumistatin.

Claim 51 (withdrawn): A method as in claim 50, wherein the plurality consists of from 3 to 10^6 molecules.

Claim 52 (withdrawn): A method as in claim 51, wherein the plurality consists of from 5 to 10^5 molecules.

Claim 53 (withdrawn): A method as in claim 52, wherein the plurality consists of from 7 to 5×10^4 molecules.

Claim 54 (withdrawn): A method as in any of claim 49, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are covalently bound through the moieties to the backbone.

Claim 55 (withdrawn): A method as in claim 54, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when attached to the backbone.

Claim 56 (withdrawn): A method as in claim 54, wherein the linking moieties are bound to rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains attached to the backbone and restored when the rapamycin is released from the backbone.

Claim 57 (withdrawn): A method as in claim 54, wherein the backbone degrades under preselected conditions to release the rapamycin molecules.

Claim 58 (withdrawn): A method as in claim 54, wherein the linking moieties lyse under preselected conditions to release the rapamycin molecules from the backbone.

Claim 59 (withdrawn): A method as in claim 54, wherein the backbone comprises a poly (amino acid).

Claim 60 (withdrawn): A method as in claim 59, wherein the backbone is polyaspartate, wherein rapamycin is covalently attached via an ester linkage between a free carboxylic acid on the aspartate side chain to a free hydroxyl at position 42 of rapamycin.

Claim 61 (withdrawn): A method as in claim 59, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a heterobifunctional linker between a free thiol on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 62 (withdrawn): A method as in claim 59, wherein the backbone is polylysine, wherein rapamycin is covalently attached via an amide-ester linkage between a free amine on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 63 (withdrawn): A method as in claim 59, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a disulfide linkage through a free thiol introduced to the rapamycin.

Claim 64 (withdrawn): A method as in claim 59, wherein the backbone comprises polyethylene glycol (PEG), wherein the molecules comprise rapamycin attached to the PEG by ester linkages between free hydroxyls on the PEG and on the rapamycin.

Claim 65 (withdrawn): A method for preparing a linked plurality of molecules which specifically bind to the mammalian target of rapamycin, said method comprising:

polymerizing the molecules.

Claim 66 (withdrawn): A method as in claim 65, wherein the plurality consists of from 3 to 10^6 molecules.

Claim 67 (withdrawn): A method as in claim 66, wherein the plurality consists of from 5 to 10^5 molecules.

Claim 68 (withdrawn): A method as in claim 67, wherein the plurality consists of from 7 to 5×10^4 molecules.

Claim 69 (withdrawn): A method as in claim 65, wherein the molecules comprise rapamycin.

Claim 70 (withdrawn): A method as in claim 69, wherein polymerizing comprises: derivatizing the rapamycin molecules with a polymerizable moiety; and polymerizing the polymerizable moieties to covalently bind the rapamycin molecules via the moieties.

Claim 71 (withdrawn): A method as in claim 70, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when polymerized.

Claim 72 (withdrawn): A method as in claim 70, wherein the linking moieties are bound to the rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains polymerized and restored when the rapamycin is released.

Claim 73 (withdrawn): A method as in claim 70, wherein the polymerized moieties lyse under preselected conditions.

Claim 74 (withdrawn): A method as in claim 70, wherein the polymerized moieties comprise ascorbic acid attached to the rapamycin molecules via an ester linkage.

Claim 75 (withdrawn): A method as in claim 70, wherein the polymerizable moiety comprises ascorbic acid.

Claim 76 (withdrawn): A method for modifying an implantable prosthesis, said method comprising:

providing an implantable prosthesis having a surface; and
binding linked pluralities of molecules which specifically bind to the mammalian target of rapamycin (mTOR).

Claim 77 (withdrawn): A method as in claim 77, wherein the implantable prosthesis comprises a vascular prosthesis or stent implantable in a blood vessel.

Claim 78 (withdrawn): A method as in claim 77, wherein binding comprises covalently attaching linked pluralities of rapamycin to the surface.

Claim 79 (withdrawn): A method as in claim 78, wherein binding comprises generating free amines on the surface and forming an amide linkage to a carboxy moiety in the linked pluralities of rapamycin.

Claim 80 (withdrawn): A method as in claim 78, wherein the linked pluralities of rapamycin have from 3 to 10^6 molecules linked.

Claim 81 (withdrawn): A method as in claim 79, wherein the linked pluralities of rapamycin have from 5 to 10^5 molecules linked.

Claim 82 (withdrawn): A method as in claim 80, wherein the linked pluralities of rapamycin have from 7 to 5×10^4 molecules linked.

Claim 83 (withdrawn): A method as in any of claim 78, wherein the linked pluralities of rapamycin are linked via attachment to a backbone.

Claim 84 (withdrawn): A method as in claim 83, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are covalently bound through the moieties to the backbone.

Claim 85 (withdrawn): A method as claim 84, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when attached to the backbone.

Claim 86 (withdrawn): A method as in claim 84, wherein the linking moieties are bound to rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains attached to the backbone and restored when the rapamycin is released from the backbone.

Claim 87 (withdrawn): A method as in claim 83, wherein the backbone degrades under preselected conditions to release the rapamycin molecules.

Claim 88 (withdrawn): A method as in claim 83, wherein the linking moieties lyse under preselected conditions to replace the rapamycin molecules from the backbone.

Claim 89 (withdrawn): A method as in claim 83, wherein the backbone comprises a poly (amino acid).

Claim 90 (withdrawn): A method as in claim 89, wherein the backbone is polyaspartate, wherein rapamycin is covalently attached via an ester linkage between a free carboxylic acid on the aspartate side chain to a free hydroxyl at position 42 of rapamycin.

Claim 91 (withdrawn): A method as in claim 89, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a heterobifunctional linker between a free thiol on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 92 (withdrawn): A method as in claim 89, wherein the backbone is polylysine, wherein rapamycin is covalently attached via an amide-ester linkage between a free amine on the lysine to a free hydroxyl at position 42 of rapamycin.

Claim 93 (withdrawn): A method as in claim 89, wherein the backbone is polylysine, wherein rapamycin is covalently attached via a disulfide linkage through a free thiol introduced to the rapamycin.

Claim 94 (withdrawn): A method as in claim 83, wherein the backbone comprises polyethylene glycol (PEG), wherein the molecules comprise rapamycin attached to the PEG by ester linkages between free hydroxyls on the PEG and on the rapamycin.

Claim 95 (withdrawn): A method as in any of claim 78, wherein the molecules are polymerized.

Claim 96 (withdrawn): A method as in claim 95, wherein the molecules comprise rapamycin molecules which have been derivatized with linking moieties and wherein the rapamycin molecules are polymerized through the linking moieties.

Claim 97 (withdrawn): A method as in claim 96, wherein the linking moieties are bound to the rapamycin molecules at sites which do not sterically interfere with the active sites of rapamycin so that rapamycin retains its activity when polymerized.

Claim 98 (withdrawn): A method as in claim 96, wherein the linking moieties are bound to the rapamycin molecules at sites which sterically interfere with the active sites of rapamycin so that rapamycin activity is inhibited while the rapamycin remains polymerized and restored when the rapamycin is released.

Claim 99 (withdrawn): A method as in claim 96, wherein the linking moieties lyse under preselected conditions.

Claim 100 (withdrawn): A method as in claim 96, wherein the linking moieties comprise ascorbic acid attached to the rapamycin molecules via an ester linkage.

Claim 101 (currently amended): A composition as in [[any of]]claim 1, further comprising an unlinked ascorbic acid moiety.